

REMARKS

Reconsideration of the pending application is respectfully requested in view of the following observations.

1. Cross-reference to related application

As acknowledged in the outstanding Action, this application is related to co-pending U.S. application 10/574,831. Many of the same issues with the claim language were already addressed in the '831 application, and approved by the same examiner handling this application. As will become readily apparent in the following discussion, the claims of this application have been amended in some aspects similar to the amendments in the '831 application.

2. In the specification

The written description and the abstract of the disclosure have been amended to reflect an amendment to the claims. Each amendment to the specification finds support in the original specification and claims, either explicitly or inferentially. Nothing has been introduced by way of the amendment to the specification that would be regarded as adding something new to the original disclosure by a person skilled in the art to which this invention pertains.

Further discussion of the amendment to the specification appears below under the discussion regarding the rejection of the claims under 35 U.S.C. § 112.

Entry of the amendment to the specification is kindly requested in the next Office communication.

3. In the claims

Claim 1 is amended with the subject matter of claims 2 and 11, and the claims dependent therefrom have been amended accordingly. Claims 2 and 11 are hereby cancelled without prejudice or disclaimer.

Claim 1 has been amended to clarify that the claim is directed to a composition for a coding which forms at least part of a coding system for a value document. Support for this language is found in claim 1 as originally filed, as it is clear that the coding system may include "possible codings" and these possible codings have a composition of the type specified by the claim.

As discussed in the reply dated June 8, 2009 in the '831 application, the term "coding" of the instant disclosure connotes "a detectable or observable signal character for communication." The applicant submits that this definition is consistent with the normal dictionary meaning of a code, and is consistent with the description in the instant disclosure. The specification has been amended accordingly, as mentioned above.

Regarding the expression "coding system," it is clear from the originally-filed claims and the specification that the coding system is composed of a combination or possible different "codings." The coding system is included with a value document and has particular detectable or observable signal characters for communication concerning the value document.

Claim 1 has further been amended by removing the term "possible" when referring to the coding.

Claim 21 is amended to recite a value document.

It is submitted that there is clear support for the amendment to the claims. Entry of the amendment to the claims is kindly requested in the next Office communication.

4. Rejection of claim 21 under 35 U.S.C. § 101

Claim 21 has been amended to recite a value document having a coding system formed by at least part of the coding composition of claim 1. This amendment to the claim clearly makes claim 21 so that it recites an apparatus claim, as opposed to a process claim.

It is submitted that amended claim 21 fully complies with 35 U.S.C. § 101. Withdrawal of this rejection is kindly requested.

5. Rejection of claims 1-25 under 35 U.S.C. § 112, second paragraph

As claims 1-20 and 21-25 have been amended so as to be directed to a composition for a coding forming at least part of a coding system for a value document. Hence, the claims themselves are now focused as being compositional claims, as recommended in the Action.

Claim 1 has also been amended by removal of the term "possible," so that the claim is clearly directed to a composition for a coding forming at least part of a coding system.

Amended claim 1 therefore complies with 35 U.S.C. § 112, second paragraph.

Claim 4 has been amended by modifying the claim so that it is directed to a single spectral range.

Amended claim 4 thereby clearly and definitely defines the claimed spectral range.

Claim 10 has not been amended since, as specified in the reply dated December 15, 2009 in the '831 application, that the term "mixed crystal" is considered by the applicant to be sufficiently clear to the skilled person.

A casual inquiry regarding the term "mixed crystal" using the search engine GOOGLE resulted in more than 380,000 hits. The expression "mixed crystal" simply means a crystal formed of a mixture of materials each of which is capable of crystallization. Exemplary illustrations can be noted for example in International Published Application WO/1999/030574, a copy of the abstract of which was appended to the reply dated December 15, 2009, as well as the abstract of the paper authored by W. N. Honeyman and M. K. Lee entitled "Properties of Mixed Crystals of Triglycine Sulfate and Selenate," *J. Phys. D: Appl. Phys.*, vol. 5, *pgs 188-192*.

The examiner's attention is further invited to the description of the various embodiments of host lattices and dopants as specified in U.S. 4,452,843 and U.S. 4,451,530 which correspond to the European patents identified in paragraph [0014] of the instant application. Copies of these European patents were submitted for the examiner's consideration in the Information Disclosure Statement submitted with this response.

No changes to claim 10 are considered necessary in view of these observations and therefore claim 10 complies with 35 U.S.C. § 112, second paragraph.

Claims 11 (now incorporated into claim 1), 14 and 15 are sufficiently definite within the scope of 35 U.S.C. § 112, second paragraph, on the basis of the

observations regarding the expression “complementary” discussed in the replies dated December 15, 2008 and June 8, 2009 in the ‘831 application.

Specifically, it should be clear that “complemented” means that each of the first and second luminescent additives can be said to complement the other to produce the whole of the joint emission range or envelope of luminescence emissions. The term “complement” is used in accordance with its normal dictionary meaning, as meaning “something that fills up or completes.”

The written disclosure explains in paragraphs [0019], [0034] and [0037] what is meant by the expression “overlap complementarily” within the scope of the application. In the present application, the wording “complement” has been used as a translation of the German wording “ergänzen,” which means that the spectra of the used different luminescent substances form in the overlapping area a new spectrum. It follows from the disclosure and the composition of the claims that by combining different substances, a new spectrum is difficult to counterfeit.

From these observations, the term “complemented” simply means that the individual subrange of emission spectrum or the first additive overlaps with the individual subrange of the emission spectrum of the second additive in a manner such that a joint emission range results from the combination of the individual emission spectra such that one complements or “completes” the other.

It is respectfully submitted that a careful reading of the specification of the application will reveal that the term “complemented” or “complementarily” is appropriate in the context in which the term is used in this application and in the claims, and such would be readily understandable to a person skilled in the art.

Accordingly, withdrawal of the rejection under 35 U.S.C. § 112, second paragraph is respectfully requested.

6. Double Patenting Rejections

Applicant will submit an appropriate terminal disclaimer upon an indication of allowable subject matter in this application.

7. Rejection of claims 1, 2, 5-8 and 20-22 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent 3,473,027 (Freeman)

Reconsideration of this rejection is respectfully requested in view of the amendment to the claims and the following observations.

It is submitted that *Freeman* does not disclose the composition of the amended and rejected claims. In short, there is no disclosure which indicates that the luminescent substances exhibit an emission with a complemented overlapping. Instead, *Freeman* refers to clearly discriminated emission lines for a coding.

Specifically, *Freeman* explicitly states that an overlapping, explained by *Freeman* as interference between components, must be prevented (col. 4, ll. 9 – 29).

Accordingly, *Freeman* does not anticipate every limitation of claim 1 from which the remaining claims of this rejection depend, especially the limitation of complemented overlapping of additives.

Withdrawal of this rejection is respectfully requested.

8. Rejection of claims 1, 2, 5-8, 11, 12, 14, 16-18, 20 and 22-25 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent 4,013,490 (*Ryan*)

Reconsideration of this rejection is respectfully requested in view of the amendment to the claims and the following observations.

It is submitted that *Ryan* does not disclose the composition of the amended and rejected claims. In short, there is no disclosure which indicates that the luminescent substances exhibit an emission with a complemented overlapping. Instead, *Ryan* refers to clearly discriminated emission lines for a coding.

Specifically, *Ryan* describes clearly discriminated emission lines for an explosive agent (col. 3, ll. 1-12). There is no understanding in *Ryan* of any type of a coding, as explained and defined in the pending application.

Accordingly, *Ryan* does not anticipate every limitation of claim 1 from which the remaining claims of this rejection depend, especially the limitation of complemented overlapping of additives for a composition of a coding for a coding system for a value document.

Withdrawal of this rejection is respectfully requested.

9. Rejection of claims 1-5, 11, 14-18, 20, 21, 23 and 24 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent 6,380,547 (*Gonzalez*)

Reconsideration of this rejection is respectfully requested in view of the amendment to the claims and the following observations.

According to *Gonzalez*, it teaches that a coding is only achieved by certain strictly separated detectable wavelength maxima. It is submitted that these teachings of *Gonzalez* do not anticipate the limitations of independent claim 1.

Specifically, *Gonzalez* discloses a coding by means of luminescent substances whereas a plurality of laser luminophores are selected that fluoresce different wavelengths in a predetermined region of the spectrum (col. 1, ll. 56-65). *Gonzalez* teaches that by combining different laser luminophores, a unique spectral signature may be obtained. The unique signature may be obtained in that the used substances have fluorescence peaks for certain wavelengths (col. 1, l. 66 to col. 2, l. 1).

The coding is obtained in that a certain region of the electromagnetic spectrum is subdivided into a plurality of subregions (col. 2, ll. 27-29). Within these subregions, a sufficient number of laser luminophores is established with luminesce within the subregions in order to achieve codings (col. 2, ll. 31-35). In a region of 300 to 1000 nm (col. 2, l. 50), ten laser luminophores are selected having distinctly discriminable luminescent maxima in the region of 300 to 450 nm (col. 2, ll. 52-54) in order to code different years.

Twelve laser luminophores having differentiable luminescent maxima are selected in the region of 800 to 1000 nm (col. 2, ll. 55-57) in order to code different months. Thirty laser luminophores are selected in the region of 450 to 550 nm (col. 2, ll. 57-59) in order to code different companies. Moreover, thirty-one laser luminophores are selected in the region of 650 to 800 nm (col. 2, ll. 63-65) in order to code different days.

All selected luminescent maxima are discriminable in that they have a maximum at a certain wavelength or in that the maximum has a certain intensity, shape and/or certain fading characteristics. According to *Gonzalez* at col. 10, ll. 30-33 and 54-60, as well as in col. 4, ll. 39-55 cited in the Action, subdividing a certain region of a spectrum is similarly described, whereas within regions laser

luminophores are used that have unique differentiable luminescent maxima at certain wavelengths.

From these observations, it is clear that *Gonzalez* describes obtaining a coding in that laser luminophores are used which have a maximum at certain wavelengths. It follows that due to detection of certain maxima of certain laser luminophores at certain wavelengths, the present coding may be decoded.

Gonzalez therefore does not describe that the used luminescent substances form a pair of mutually associated luminescent substances whose emission spectra overlap in at least a subrange of the joint emission range such that the emission spectrum of the first additive is complemented by the emission spectrum of the second additive. The overlapping of emission spectra of single laser luminophores in *Gonzalez*, however, is of a completely random nature. Thus, the teachings of *Gonzalez* neither result in a desirable effect nor may be used as a coding.

As explained above, *Gonzalez* achieves a coding or decoding in that the completely separated wavelength maxima of the used laser luminophores are detected, whereas the wavelength maxima do not influence each other in any way or even complement each other.

Accordingly, it is submitted that *Gonzalez* does not anticipate amended claim 1 and the claims dependent therefrom. Particularly, *Gonzalez* teaches a coding which is only achieved by certain strictly separated detectable wavelength maxima.

Withdrawal of this rejection is respectfully requested.

10. Rejection of claims 1, 2, 6-10, 21 and 22 under 35 U.S.C. § 102(b) as being anticipated by WO 02/070279 (*Giering*)

Reconsideration of this rejection is respectfully requested in view of the amendment to the claims and the following observations.

It is submitted that *Giering* does not disclose the composition of the amended and rejected claims. *Giering* does not disclose the limitation that two luminescent substances may form a pair of mutually associated luminescent substances such that the emission spectra of the first additive are complemented by the emission spectrum of the second additive substances.

Accordingly, *Giering* does not anticipate every limitation of claim 1 from which the remaining claims of this rejection depend.

Withdrawal of this rejection is respectfully requested.

11. Conclusion

As a result of the amendment to the claims, and further in view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicant's attorney, the examiner is invited to contact the undersigned at the numbers shown below.

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Date: September 28, 2009

Respectfully submitted,

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